UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte YOSHIMASA SAITOH
And HISANORI TSUBOI

Appeal 2007-3831
Application 09/496,656
Technology Center 1700

Decided: November 29, 2007

Before BRADLEY R. GARRIS, CATHERINE Q. TIMM, and LINDA M. GAUDETTE, *Administrative Patent Judges*.

GARRIS, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134 from the Examiner's decision rejecting claims 8-11 and 13. We have jurisdiction under 35 U.S.C. § 6.

We AFFIRM.

Appellants claim a liquid crystal display device comprising a pair of transparent substrates having a liquid crystal layer therebetween wherein the liquid crystal display device has a pre-tilt angle greater than or equal to 3.5 degrees.

Representative independent claim 8 reads as follows:

8. A liquid crystal display device comprising a pair of transparent substrates being aligned via a predetermined distance therebetween with at least one of them having thereon a film for liquid crystal orientation, and a liquid crystal layer put in the distance between the substrates, wherein

the film is a UV-reactive film, and is exposed to first polarized UV rays while the film is on the substrate aligned parallel to a reference plane, and next to second polarized UV rays after the substrate is rotated on the reference plane, and

wherein the liquid crystal display device has a contrast ratio greater than or equal to 138 effected by the exposure to the first polarized UV rays and the second polarized UV rays,

wherein the liquid crystal display device has a pre-tilt angle greater than or equal to 3.5° effected by the exposure to the first polarized UV rays and the second polarized UV rays, and

wherein the ratio of the exposure energy during the first polarized UV rays exposure to that of the second polarized UV rays exposure is to 5:1.

The references set forth below are relied upon by the Examiner as evidence of obviousness:

Park	5,998,101	Dec. 7, 1999
Gibbons	6,307,609 B1	Oct. 23, 2001

Claims 8-11 and 13[1] are rejected under 35 U.S.C. § 103(a) as being unpatentable over Gibbons in view of Park.

The dispositive issue in this appeal is whether it would have been obvious for one with ordinary skill in this art to provide the liquid crystal display device of Gibbons with a pre-tilt angle greater than or equal to 3.5 degrees as required by independent claim 8.

It is undisputed that Gibbons discloses a liquid crystal display device having a pre-tilt angle (col. 2, ll. 29-56).

It is also undisputed that, while Gibbons does not disclose a specific value for the pre-tilt angle of the device, the background discussion of the Gibbons patent reveals that most liquid crystal display devices have a finite pre-tilt angle, for instance, of about 2-15 degrees (col. 1, ll. 38-46).

The Examiner concludes that it would have been obvious for one with ordinary skill in this art to provide the liquid crystal display device of Gibbons with a pre-tilt angle of 3.5 degrees or greater as required by independent claim 8 (Ans. 4).

Appellants have not contested this obviousness conclusion with any reasonable specificity (*see* the Appeal and Reply Briefs in their entireties). Instead, Appellants argue that the applied prior art contains no teaching or suggestion of providing Gibbons with such a pre-tilt angle via an exposure

[1] Claim 13, while proper as a multiple dependent claim in terms of format, is informal in that it depends from canceled claim 12. *See* the Manual of Patent Examining Procedure (MPEP) § 608.01(n)(Rev. 5, Aug. 2006). This informality should be corrected in any further prosecution that may occur.

energy ratio (i.e., first polarized UV rays exposure to second polarized UV rays exposure) of 5:1 as recited in claim 8 (App. Br. 3-4).[2]

In response to this argument, the Examiner points out that "[i]f the product in the product-by-process claim [i.e., appealed claim 8] is the same as or obvious from a product of the prior art [i.e., Gibbons], the claim is unpatentable even though the prior product was made by a different process" (Ans. 8). Thus, it is the Examiner's fundamental position that the claim 8 display device having a pre-tilt angle of 3.5 degrees or greater is indistinguishable from the display device having a corresponding pre-tilt angle as suggested by Gibbons even if the respective devices are made by different processes.

The above quoted legal principle expressed by the Examiner is well established. *See In re Thorpe*, 777 F.2d 695, 698 (Fed. Cir. 1985). Moreover, this legal principle and the unpatentability conclusion based thereon have not been contested by Appellants (*see* the Reply Brief in its entirety). These circumstances evince a prima facie case of obviousness which has not been rebutted on the record of this appeal.

For this reason alone, it is appropriate to sustain the § 103 rejection before us.

In addition, it is appropriate to sustain this rejection because, as properly determined by the Examiner (Ans. 4) and contrary to Appellants' argument (App. Br. 3; Reply Br 4), the disclosure of Gibbons would have

[2] Appellants have not separately argued dependent claims 9-11 and 13 (App. Br. 4).

suggested using the claim 8 exposure energy ratio of 5:1 to obtain a pre-tilt angle of 3.5 degrees or greater.

This is because Gibbons, like Appellants, expressly teaches using first and second exposures for generating alignment direction and pre-tilt respectively (col. 7, ll. 25-37), wherein "[e]ach exposure system can be individually tuned to provide the type of exposure necessary for a complete exposure process" (*id.* at ll. 38-40). In light of this teaching, an artisan would have recognized that the degree of first and second exposures would result in the desired degree of alignment direction and pre-tilt respectively. Analogously, the artisan would have recognized that the ratio of these energy exposures would have a resulting effect on the degree of alignment direction and pre-tilt generated.

Generally speaking, it would have been obvious for an artisan to develop workable values for an art-recognized, result-effective parameter. *See In re Woodruff*, 919 F.2d 1575, 1578 (Fed. Cir. 1990) and *In re Boesch*, 617 F.2d 272, 276 (CCPA 1980).

In light of this legal principal and the above finding that the exposure energy ratio under consideration is an art-recognized, result-effective variable, we fully share the Examiner's conclusion that it would have been obvious for the artisan to provide Gibbons display device with a pre-tilt angle of 3.5 degrees or greater by first and second exposures having an appropriate exposure energy ratio such as the 5:1 ratio defined by claim 8.

In light of foregoing, we hereby sustain the § 103 rejection of all appealed claims as being unpatentable over Gibbons in view of Park.

The decision of the Examiner is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(vi)(effective Sept. 13, 2004).

AFFIRMED

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